Complete Summary

GUIDELINE TITLE

Guidelines for the use of deep sedation and anesthesia for gastrointestinal (GI) endoscopy.

BIBLIOGRAPHIC SOURCE(S)

Faigel DO, Baron TH, Goldstein JL, Hirota WK, Jacobson BC, Johanson JF, Leighton JA, Mallery JS, Peterson KA, Waring JP, Fanelli RD, Wheeler-Harbaugh J. Guidelines for the use of deep sedation and anesthesia for GI endoscopy. Gastrointest Endosc 2002 Nov;56(5):613-7. [23 references] PubMed

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Gastrointestinal endoscopy-appropriate diseases or conditions

GUIDELINE CATEGORY

Management

CLINICAL SPECIALTY

Anesthesiology
Gastroenterology

INTENDED USERS

Advanced Practice Nurses
Nurses
Physicians

GUIDELINE OBJECTIVE(S)

To provide recommendations for the use of deep sedation and anesthesia for gastrointestinal endoscopy

TARGET POPULATION

Adults with conditions that require deep sedation and anesthesia for gastrointestinal endoscopy

INTERVENTIONS AND PRACTICES CONSIDERED

1. Combination of a benzodiazepine and a narcotic with or without adjuncts, such as diphenhydramine, promethazine, and droperidol
2. Propofol
3. Propofol administered by non-anesthesiologists
4. Patient-controlled sedation and analgesia (PCS)
5. Extended monitoring techniques
6. Use of anesthesiologist assistance

MAJOR OUTCOMES CONSIDERED

- Episodes of severe respiratory depression
- Recovery time
- Level of sedation
- Patient comfort

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

In preparing this guideline, a MEDLINE literature search was performed, and additional references were obtained from the bibliographies of the identified articles and from recommendations of expert consultants.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

In a separate report, cost effectiveness modeling with a sensitivity analysis found nurse-administered propofol to be the dominant strategy, when compared to standard sedation and analgesia.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Recommendations are followed by evidence grades (A-C) identifying the type of supporting evidence. Definitions of the evidence grades are presented at the end of the "Major Recommendations" field.

Anesthetic agents such as propofol and sedation adjuncts such as droperidol, promethazine, and diphenhydramine are useful in certain patients undergoing endoscopic procedures. While propofol provides faster onset and deeper sedation than standard benzodiazepines and narcotics, as well as faster recovery, clinically important benefits have not been consistently demonstrated in average-risk patients undergoing standard upper and lower endoscopy (A). The routine use of propofol in these patients cannot currently be endorsed. For prolonged therapeutic procedures, these agents have been demonstrated to be superior to standard benzodiazepine/narcotic sedation and their use should be considered (A). Deep sedation requires more intensive monitoring by trained individuals (B). The assistance of anesthesiologists should be considered in patients undergoing prolonged therapeutic procedures requiring deep sedation, those with anticipated intolerance of standard sedatives, and those at increased risk for sedation-related complications, such as patients with severe comorbidities or with anatomic variants increasing the risk of airway obstruction (C). The use of agents to achieve sedation for endoscopy must conform to the individual institution's policies.

Guidelines for the Use of Droperidol for Endoscopic Procedures

- Use only in select patients with:
    - Anticipated intolerance of standard sedatives
    - Anticipated long procedure time
- Obtain 12-lead electrocardiogram (ECG). Droperidol is contraindicated if the QTc is prolonged (>440 msec males, >450 msec females).
- Patients should remain on a cardiac monitor during the procedure and for 2 to 3 hours afterward.
- Use with caution in patients at risk for development of prolonged QT syndrome: congestive heart failure (CHF), bradycardia, cardiac hypertrophy, hypokalemia/magnesemia, on other drugs known to prolong the QT interval.
- Dosage: Refer to the original guideline document.

Appropriate Personnel and Equipment for Propofol Use in an Endoscopic Procedure Room

- At least one person who is qualified in both basic and advanced life support skills (i.e., tracheal intubation, defibrillation, use of resuscitation medications)
- Physiologic monitoring should include pulse oximetry, electrocardiography, and automated blood pressure measurement. Monitoring oxygenation by pulse oximetry is not a substitute for monitoring ventilatory function.
- Equipment for airway management and resuscitation
- Trained personnel dedicated to the continuous and uninterrupted monitoring of the patient´s physiologic parameters and administration of propofol
- Extended monitoring with capnography should be considered, as it may decrease the risks during deep sedation.

Guideline for Anesthesiology Assistance during Gastrointestinal Endoscopy

Anesthesiologist assistance may be considered in the following situations:

- Prolonged or therapeutic endoscopic procedure requiring deep sedation

- Anticipated intolerance to standard sedatives
- Increased risk for complication due to severe comorbidity (American Society of Anesthesiologists [ASA] class III physical status classification or greater)
- Increased risk for airway obstruction due to anatomic variant

Definitions:

A. Randomized controlled trials
B. Non-randomized studies
C. Expert opinion

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and classifed for the recommendations using the following scheme:

A. Randomized controlled trials
B. Non-randomized studies
C. Expert opinion

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Overall

Appropriate selection of deep sedation and anesthetic agents and effective management of deep sedation and anesthesia during gastrointestinal endoscopy procedures by qualified clinicians

Specific

- Propofol potentiates the effects of narcotic analgesics and sedatives and therefore, the dose requirements of these agents may be reduced.
- Propofol shows improved levels of sedation, faster recovery time, faster return to a baseline food intake and activity level, and improved patient satisfaction as compared to midazolam and meperidine.

POTENTIAL HARMS

- Although rarely reported in the gastrointestinal (GI) literature, droperidol has been associated with potentially life threatening cardiac arrhythmia (Torsade de Pointes).

- Pain at the injection site is the most frequent local complication of propofol, occurring in up to 5% of patients. The most serious risk of its use is respiratory depression. Episodes of severe respiratory depression necessitating temporary ventilatory support have occurred in large series utilizing propofol for endoscopic procedures.
- In two studies of propofol compared to midazolam for endoscopic retrograde cholangiopancreatography (ERCP), untoward effects such as hypotension and hypoxemia occurred equally in both treatment groups. However, in both of the ERCP series, one patient in the propofol group developed prolonged apnea that necessitated discontinuation of the procedure and temporary ventilatory support. The addition of midazolam to propofol in 239 patients undergoing therapeutic upper endoscopy or ERCP significantly lengthened mean recovery time without conferring other clinical benefits over propofol alone.

CONTRAINDICATIONS

CONTRAINDICATIONS

Specific contraindications to propofol administration include allergies to propofol or any of the emulsion components, pregnant or lactating females, and patients with an American Society of Anesthesiologists (ASA) IV or V physical status classification.

Droperidol is contraindicated if the QTc is prolonged (>440 msec males, >450 msec females).

QUALIFYING STATEMENTS

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The information in this guideline is intended only to provide general information and not as a definitive basis for diagnosis or treatment in any particular case. It is very important that patients consult their doctor about their specific condition.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2002 Nov

GUIDELINE DEVELOPER(S)

American Society for Gastrointestinal Endoscopy - Medical Specialty Society

SOURCE(S) OF FUNDING

American Society for Gastrointestinal Endoscopy

GUIDELINE COMMITTEE

Standards of Practice Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Committee Members: Douglas O. Faigel, MD (Chair); Todd Baron, MD; Jay L. Goldstein, MD; William K. Hirota, MD; Brian C. Jacobson, MD; John Johanson, MD; Jonathon A. Leighton, MD; Shawn Mallery, MD; Kathryn Peterson, MD; John J. Vargo, MD; J. Patrick Waring, MD; Jo Wheeler-Harbaugh, RN (SGNA Representative)

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Society for Gastrointestinal Endoscopy Web site.

Print copies: Available from the American Society for Gastrointestinal Endoscopy, 1520 Kensington Road, Suite 202, Oak Brook, IL 60523

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on April 15, 2004. The information was verified by the guideline developer on May 12, 2004.

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